

**SESSION XVI**  
**INCORPORATING P<sup>2</sup> INTO ACQUISITION**

**SESSION CHAIRPERSONS:**

**Mr. Robert Chabot, HQ AETC/CEVQ**  
**Ms. Cindy Hood, HQ AFCEE/EQT**

## Incorporating Pollution Prevention into the Acquisition Process



Mr. G. Richard Freeman  
Major Judy M. Gist  
HQ AETC/LG-EM  
555 E Street East  
Randolph AFB TX 78150-4440  
**Error! Bookmark not defined.**

**Objective:** To illustrate the importance for operators and maintainers of weapons systems and associated equipment to assume total cost ownership.

**Background:** In the not too distant past, weapons systems were developed and fielded with little to no input from the organizations that were going to operate and maintain them. The materials designed into the system, either resident on the weapon system or mandated by technical order for use in the repair and preventive maintenance of the system, did not take into consideration the costs associated with using and disposing of many of these materials. Environmental regulations have increased significantly over the last few decades, as has our knowledge about the impacts of using certain materials. These changes have reduced detrimental effects to the environment and provided safer working conditions for our personnel, but not without a cost. If we can further reduce our use of these hazardous materials through pollution prevention efforts, the cost of the weapon system over its lifetime, with all the associated costs to maintain and dispose of it, will be greatly reduced. With our budgets tightening each year, putting our efforts into finding less costly as well as less hazardous materials will reduce the life cycle cost of the weapon system. Whether it is incorporating these changes into new aircraft or existing ones, the acquisition community is the body of professionals that provides us with the tools we need to accomplish this mission. Process owners must learn to effectively communicate their needs to the acquisition community and partner where we can to facilitate the entire process. Facilitating the reduction of costs associated with Environmental, Safety and Occupational Health (ESOH) impacts upon our weapons systems is a major goal of AETC's Logistics Environmental Management office. Once all costs associated with maintenance are understood, inclusive of environmental, safety and occupational health requirements, process owners are best positioned to help reduce/eliminate these costs.

**Current Results and Continuing Development:** ESOH cost reduction/elimination is achieved through active participation in the pollution prevention process by the process owner in partnership with the acquisition community. The following text discusses a variety of vehicles that help organizations make their weapons systems needs known to the acquisition community, an in-turn develop better partnering opportunities.

### 1. Partnerships with environmental collocates within the Systems Program Offices

AETC is responsible for over 1600 aircraft representing almost two dozen different types of weapons systems. This diversity gives us the opportunity to discuss issues with many different system program offices and share that information with others that might benefit. Developing professional relationships through face-to-face visits, electronic mediums and telephone discussions keeps the lines of communication open. This office has just begun to expand into this area. We are currently working with personnel in the T-6, C-17, F-22 SPOs as well as in our own backyard since AETC has full responsibility for the T-37s and T-38s. One initial goal was to determine what hazardous materials are resident on the weapons system and what materials are used or generated during maintenance actions.

## **2. Membership on Environmental Working Groups**

One of the major areas of our acquisition program is membership and participation with several environmental working groups. This allows us as a customer to play an active role on issues that each group is working and to submit additional requirements into the process.

### **2.1 Weapon System Pollution Prevention Center Working Group**

One of the key organizations this office is involved with is AFMC's Weapon System Pollution Prevention Center Working Group, a valuable group for interaction both within and outside the AF. This group interfaces with DOD and commercial enterprises and provides an avenue to cross-feed information across a widely diverse group. We have found that our participation is very much welcomed and encouraged. Because the commands, i.e., AFMC and AETC, are so different in their structure and mission, the interaction between the two has been highly educational and beneficial. In April of this year, AETC had the opportunity to host this group in San Antonio, Texas. This is the first time an Air Force organization outside of AFMC has hosted this event and gave AETC the chance to showcase the command and its mission. This group welcomes participation by all interested parties, especially "customers" of AFMC. The overall goal of this group is to find "*Joint Solutions to Common Problems.*"

### **2.2 Environmental, Safety and Occupational Health Technical Planning Integrated Product Team (ESOH TPIPT)**

Another key organization working to find environmental, safety and occupational health solutions for the Air Force is the ESOH TPIPT. This organization's charter clearly states the goals of this group. Knowing that the Air Force vision to build the world's most respected air and space force can be seriously impeded by ESOH issues, this organization is diligently working to identify ESOH related issues and effect changes that will reduce cost, minimize mission impact, and increase performance. The ESOH TPIPT planning process identifies and collects validated ESOH needs (near and long term) for the Air Force, finds and assesses solution options, and offers integrated solutions to customers. Customers are ultimately responsible for their submitted needs and can employ or reject the development plans provided by the ESOH TPIPT at any time.

The ESOH TPIPT consists of an integrated team of operators, policy and mission support developers, planners, engineers, scientists, logisticians, test engineers and program managers. MAJCOMs appoint a representative from each of the weapon system (logistics) and infrastructure (civil engineering) communities. Both representatives attend ESOH TPIPT meetings and participate in activities. On matters regarding ESOH TPIPT operations and process, MAJCOMs are the only TPIPT members with a vote (if voting is required) and each MAJCOM has a single vote.

### 2.3 F-22 Environmental Safety Health Working Group (F-22 ESHWG)

The first new aircraft acquisition working group, probable forerunner for the Joint Strike Fighter, to actively recruit using organizations and solicit their input and involvement. The leadership are strong advocates for safety and Bioenvironmental engineering representatives to become involved. The main goal of this group is to field this new weapon system as smoothly as possible while maximizing the benefits of lessons learned. A major effort is underway to glean information from the maintenance unit at Edwards AFB where the aircraft is undergoing flight test and use this data to improve the beddown operations at future locations.

### 2.4 C-17 Weapon System Expanded Pollution Prevention Integrated Product Team

This is an active integrated product team for a recently fielded weapon system. This group meets about four times each year in various locations and attracts and encourages participation from others working with large airframes. Our best success has come from sharing problems and success stories with others throughout the AF and DOD.

### 2.5 Propulsion Environmental Working Group (PEWG)

A very active environmental working group dedicated to issues within the propulsion arena, with active participation by many diverse agencies and contractors. These folks are working together diligently to reduce hazardous materials and waste streams from propulsion systems. Programs and projects being considered and worked under this group are increasingly focusing on business factors, including return on investment considerations

## 3. Redefinition of the Technical Needs Survey Process

When the technical survey process was first initiated, personnel submitted needs directly into HSC/XRE, the Human Systems Center at Brooks AFB, TX. It was entirely possible that the need would be assigned to a lab and worked without any one at the owning installation or MAJCOM having any knowledge of the project until after already underway or even competed. "Solutions" would be fed back to the command and offer a solution to a problem that may or may not even exist at that time. With no MAJCOM "buy-in" this process offered the potential for a great deal of wasted time and money.

Through the efforts of many individuals, this issue was reengineered to ensure that all technical needs are validated at base level before submitting to the respective major command. Figure 1

shows the revised process. Tied to this process AETC has formally implemented standardized evaluation criteria that allow both the individual bases and the MAJCOM to equitably rack and stack proposed initiatives/programs.

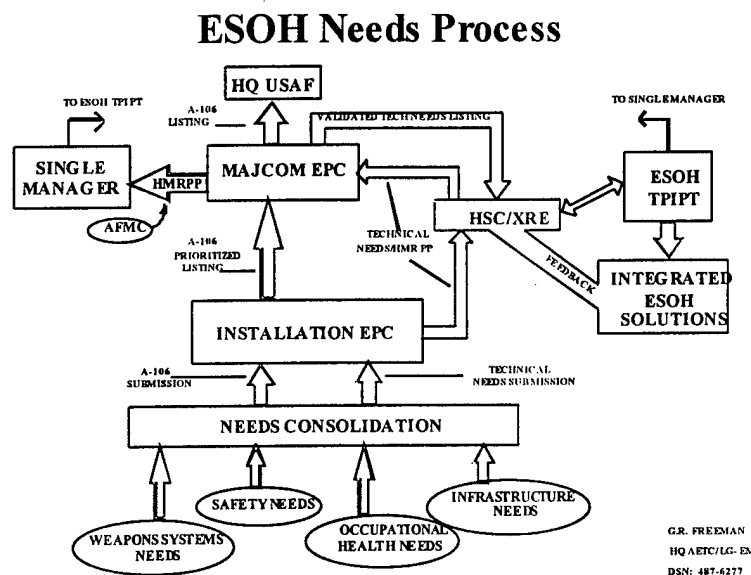


Figure 1

#### 4. Instilling change from the bottom up through the Shop-Level Pollution Prevention Training Program

Many of the best ideas are born in the shops, from those closest to the action. But if these individuals don't know how "the system" works, how can they get the "right" audience for their ideas? To provide our shop personnel with the tools needed to initiate change and form the first foundation building block of our overall program, Shop-Level Pollution Prevention Training was developed to empower shop workers by instructing them in four basic subject areas: what pollution prevention is, familiarization with legal drivers, how P2 applies to their individual shop operations, and how to generate ideas and where to go for help.

The training manual is a road map for this process. When the course was first introduced, LG-EM brought the LG Environmental Coordinators from each AETC installation to Randolph AFB TX for a train-the-trainer session. This provided each base representative with the tools to go back to his/her installation and teach the program to all shop level personnel in the logistics community. This program has been lauded by many, one of the most notable, Mr. Tad McCall, Deputy Undersecretary of Defense for Environmental Security. In a little over a year, almost 10,000 "loggies" have received the training. As a direct result of this effort, AETC has experienced a phenomenal increase in recommendations for improvement from the field. Other

installations have requested this training and have subsequently obtained it "real time" from the HQ AETC/LG-EM Website.<sup>1</sup>

An overview of the current training manual follows, updates are in the works, and projected to be incorporated by Oct 98. The first section introduces the student to the reasons why P2 is so important today, tracing the deadly results unmanaged development can have on an environment. Then, it takes a look at how Congress has approached our environmental problems, initially focusing on pollution control and transitioning over the years to target efforts in preventing pollution altogether. Some of the most prominent environmental laws are touched on followed by a discussion of what P2 is and what it's not.

The next subject area talks about the concept of process groups and an overview of a process guide. These guides discuss the major activities in detail relevant to each group and how to look at the processes within each activity to help develop P2 opportunities and possible solutions. The use of specific examples adds clarity.

The third subject area identifies a multitude of existing resources for use in developing potential pollution prevention options. Here, the student is exposed to environmental organizations, computer programs, reports, handbooks and an extensive listing of helpful sites on the World Wide Web.

With all the foregoing background under the student's belt, the last subject area addresses how to generate new options. It helps the individual develop a logical thought process, helps assess the avenue that needs to be explored and identifies who can help. From technical order changes to technical need survey inputs, this area explains how to follow through on an idea to help make it a reality. This section includes many examples of completed forms to help the reader through the process.

**Benefits/Projects:** The efforts of the logistics environmental management office are paying off. A study initiated by this office reduced NESHAP "major" source bases from 13 to 3 providing a tangible cost avoidance of \$20 M to the command and the Air Force. This is real taxpayers' money that would have to have been spent for installation upgrades to meet the more stringent requirements spelled out in the NESHAP regulation. The detailed study of air emissions showed that most of our installations emit hazardous air pollutants in quantities well under the limits that trigger mandatory compliance with NESHAP. AETC has also benefited from another \$11.2 M cost avoidance of corrosion control facility upgrades through the introduction of high solid low VOC paints. One of our ongoing projects is an initiative to secure acceptable replacement of Alodine pre-coat. The logistics community is testing two pre-coats on several T-38s and T-37s at Randolph AFB and Columbus AFB. Additionally, we are teaming with AFMC on a Joint Group - Acquisition Pollution Prevention (JG-APP) project to research and test the use of non-chromated primers on two AETC F-15's at Tyndall AFB, FL.

---

<sup>1</sup> HQ AETC/LG-EM's Website can be found at <http://www-logistics.aetc.af.mil/maint/enviro/homepage.htm>.

Through our submissions into the technical need survey (TNS) process the AETC ESOH community has mobilized Air Force resources to work AETC weapons systems issues; over \$37.6 M funded to date by AFMC. One success story is the result of a TNS that identified the need for an alternative for Ethylene Oxide Sterilization. This process is used to sterilize medical equipment and uses Freon, a Class 1 ozone-depleting chemical (ODC). The TNS evaluation identified the commercial sector as a source and Wilford Hall Medical Center found units to test. After a one-year test, the "new" sterilizers proved to work well and be much more cost effective to operate. The payback period was only 1.06 years and the follow-on savings will be just over \$100 K annually.

The working groups are making progress as well. The F-22 ESHWG, for example, was instrumental in eliminating cadmium from the F-22 landing gear. These are some examples of the positive results that are happening because the process owner is assuming responsibility and getting involved.

**Conclusion:** Active participation in all phases of the acquisition process is already providing significant tangible dividends and will continue to facilitate better decisions throughout the entire weapons system life cycle. The end result will be the minimization of ESOH costs thereby lowering the environmental compliance "bill" and freeing up funds for force modernization and other critical Air Force programs.